

Appl. No. 09/483,737
Amdt. dated 5/18/07
Reply to Office action of 1/18/07

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CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (withdrawn-currently amended). A method for producing a chip-substrate connection, which comprises:

providing a substrate;

providing a chip having a rear side and an adhesive or diffusion barrier provided on the rear side;

performing one of alloying and brazing the chip to the substrate by depositing a solder at the rear side of the chip directly on the adhesive or diffusion barrier to form a chip-substrate connection by the solder, the solder containing at least two components with at least two metal-containing constituents including a first constituent X containing a precious metal and a second constituent Y being consumed in a soldering operation by one of reacting and being dissolved by materials being joined, and the solder having a hypereutectic concentration of the second constituent Y, the solder containing a gold-tin compound (AuSn) having a composition by weight of Au to Sn of initially 70 to 30 and forming a layer

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having a thickness of from about 1 μm to about 2 μm , Sn contained in the solder diffusing away from the solder into adjoining layers, loss of Sn providing a continuous reduction in a melting temperature during a soldering procedure.

Claims 2-8 (cancelled).

Claim 9 (withdrawn): The method according to claim 1, which comprises depositing the solder at the rear side of the chip by sputtering.

Claim 10 (withdrawn): The method according to claim 1, which comprises applying the solder by sputtering with a thickness of about 1.5 μm to the rear side of the chip.

Claims 11-14 (cancelled).

Claim 15 (currently amended). A semiconductor component, comprising:

a solder containing at least two components with at least two metal-containing constituents including a first constituent X being formed of a precious metal and a second constituent Y being consumed during a soldering operation by one of reacting and being dissolved in materials which are to be

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joined, and said solder having a hypereutectic concentration of said second constituent Y;

a substrate; and

a semiconductor chip having a rear side and an adhesive or diffusion barrier provided on said rear side, said adhesive or diffusion barrier being provided directly on said solder;

said semiconductor chip being secured at said rear side to said substrate by one of alloying and brazing using said solder to form a chip-substrate connection by said solder;

said solder containing a gold-tin compound (AuSn) having a composition by weight of Au to Sn of initially 70 to 30 and forming a layer having a thickness of from about 1 μm to about 2 μm ;

Sn contained in said solder diffusing away from said solder into adjoining layers, loss of Sn providing a continuous reduction in a melting temperature during a soldering procedure.

Claims 16-17 (cancelled).